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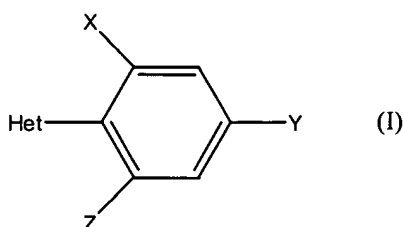
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02

1. Compounds of the formula (I)



in which

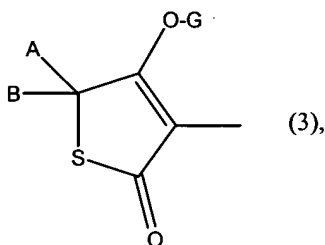
X represents halogen,

Y represents halogen or alkyl,

Z represents halogen or alkyl,

with the proviso that always one of the radicals Y and Z represents halogen and the other represents alkyl,

Het represents



in which

A represents hydrogen, or represents alkyl, alkenyl, alkoxyalkyl, polyalkoxyalkyl or alkylthioalkyl, each of which is optionally substituted by halogen, or represents in each case saturated or unsaturated and optionally substituted cycloalkyl or

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a²

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Le A 31-023 US-03

heterocyclyl, or represents aryl, arylalkyl or hetaryl, each of which is optionally substituted by halogen, alkyl, halogenoalkyl, alkoxy, halogenoalkoxy, cyano or nitro,

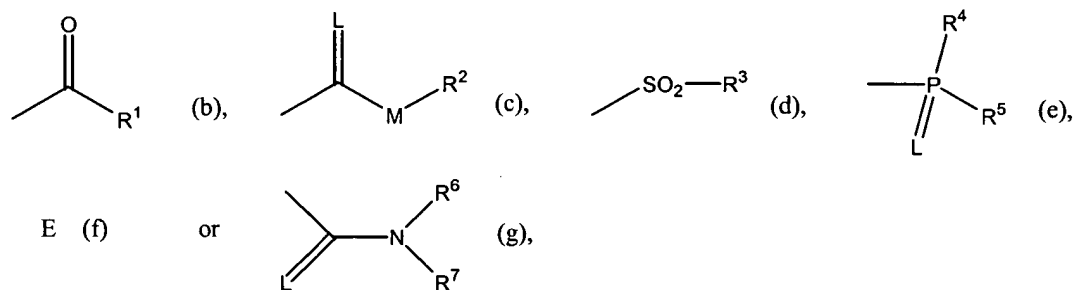
B represents hydrogen, alkyl or alkoxyalkyl, or

A and B together with the carbon atom to which they are bonded represent a saturated or unsaturated, optionally substituted carbocycle or heterocycle,

D represents hydrogen or an optionally substituted radical from the series consisting of alkyl, alkenyl, alkynyl, alkoxyalkyl, polyalkoxyalkyl, alkylthioalkyl, saturated or unsaturated cycloalkyl, saturated or unsaturated heterocyclyl, arylalkyl, aryl, hetarylalkyl or hetaryl, or

A and D together with the atoms to which they are bonded represent a saturated or unsaturated and optionally substituted carbocycle or heterocycle,

G represents hydrogen (a),



in which

E represents a metal ion equivalent or an ammonium ion,

L represents oxygen or sulphur,

M represents oxygen or sulphur,

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a²

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- R¹ represents alkyl, alkenyl, alkoxyalkyl, alkylthioalkyl or polyalkoxyalkyl, each of which is optionally substituted by halogen, or represents cycloalkyl or heterocyclyl, each of which is optionally substituted by halogen, alkyl or alkoxy, or represents in each case optionally substituted phenyl, phenylalkyl, hetaryl, phenoxyalkyl or hetarylalkyl,
- R² represents alkyl, alkenyl, alkoxyalkyl or polyalkoxyalkyl, each of which is optionally substituted by halogen, or represents in each case optionally substituted cycloalkyl, phenyl or benzyl,
- R³, R⁴ and R⁵ independently of one another represent alkyl, alkoxy, alkylamino, dialkylamino, alkylthio, alkenylthio or cycloalkylthio, each of which is optionally substituted by halogen, or in each case represent optionally substituted phenyl, benzyl, phenoxy or phenylthio,
- R⁶ and R⁷ independently of one another represent hydrogen, or represent alkyl, cycloalkyl, alkenyl, alkoxy or alkoxyalkyl, each of which is optionally substituted by halogen, or represent in each case optionally substituted phenyl or benzyl, or together with the N atom to which they are bonded represent an optionally substituted cycle which optionally contains oxygen or sulphur.

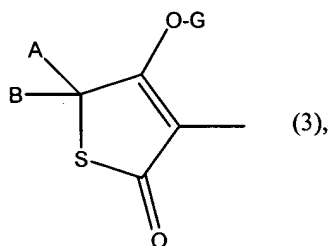
2. Compound of the formula (I) according to claim 1 in which

- X represents halogen,
Y represents halogen or C₁-C₆-alkyl,
Z represents halogen or C₁-C₆-alkyl,

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a²

where always one of the substituents Y and Z represent halogen, while the other represents alkyl,

Het represents



A represents hydrogen, or represents C₁-C₁₂-alkyl, C₂-C₈-alkenyl, C₁-C₁₀-alkoxy-C₁-C₈-alkyl, poly-C₁-C₈-alkoxy-C₁-C₈-alkyl or C₁-C₁₀-alkylthio-C₁-C₆-alkyl, each of which is optionally substituted by halogen, or represents C₃-C₈-cycloalkyl which is optionally substituted by halogen, C₁-C₆-alkyl or C₁-C₆-alkoxy and in which one or two methylene groups which are not directly adjacent are optionally replaced by oxygen and/or sulphur, or represents phenyl, naphthyl, phenyl-C₁-C₆-alkyl or hetaryl having 5 or 6 ring atoms and one to three hetero atoms from the series consisting of oxygen, sulphur and nitrogen, in each case optionally substituted by halogen, C₁-C₆-alkyl, C₁-C₆-halogenoalkyl, C₁-C₆-alkoxy, C₁-C₆-halogenoalkoxy, cyano or nitro,

B represents hydrogen, C₁-C₁₂-alkyl or C₁-C₈-alkoxy-C₁-C₆-alkyl, or

A, B and the carbon atom to which they are bonded represent C₃-C₁₀-cycloalkyl or C₅-C₁₀-cycloalkenyl in each of which a methylene group is optionally replaced by oxygen or sulphur and which are optionally substituted by C₁-C₈-alkyl, C₃-C₁₀-

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cycloalkyl, C₁-C₈-halogenoalkyl, C₁-C₈-alkoxy, C₁-C₈-alkylthio, halogen or phenyl, or

A, B and the carbon atom to which they are bonded represent C₅-C₆-cycloalkyl which is substituted by an alkylenediyl group which optionally contains one or two oxygen and/or sulphur atoms or by an alkylenedioxy or by an alkylenedithioyl group, this group, together with the carbon atom to which it is bonded forming a further five to eight-membered ring, or

A, B and the carbon atom to which they are bonded represent C₃-C₈-cycloalkyl or C₅-C₈-cycloalkenyl in which two substituents together with the carbon atoms to which they are bonded represent C₃-C₆-alkanediyl, C₃-C₆-alkenediyl or C₄-C₆-alkanedienediyl, each of which is optionally substituted by C₁-C₆-alkyl, C₁-C₆-alkoxy or halogen and in which in each case one methylene group is optionally replaced by oxygen or sulphur,

D represents hydrogen, C₁-C₁₂-alkyl, C₃-C₈-alkenyl, C₃-C₈-alkinyl, C₁-C₁₀-alkoxy-C₂-C₈-alkyl, poly-C₁-C₈-alkoxy-C₂-C₈-alkyl or C₁-C₁₀-alkylthio-C₂-C₈-alkyl, each of which is optionally substituted by halogen, or represents C₃-C₈-cycloalkyl which is optionally substituted by halogen, C₁-C₄-alkyl, C₁-C₄-alkoxy or C₁-C₄-halogenoalkyl and in which one or two methylene groups which are not directly adjacent are optionally replaced by oxygen and/or sulphur, or represents phenyl, hetaryl having 5 to 6 ring atoms and one or two hetero atoms from the series consisting of oxygen, sulphur and nitrogen, phenyl-C₁-C₆-alkyl or hetaryl-C₁-C₆-alkyl having 5 to 6 ring atoms and one to two hetero atoms from the series consisting of oxygen, sulphur and nitrogen, in each case optionally substituted by halogen, C₁-C₆-alkyl, C₁-C₆-halogenoalkyl, C₁-C₆-alkoxy, C₁-C₆-halogenoalkoxy, cyano or nitro, or

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FOOTNOTES

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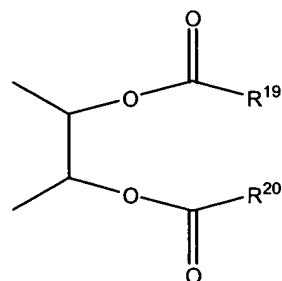
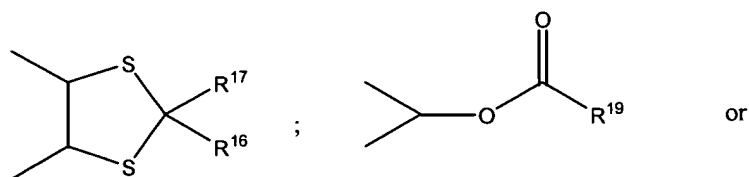
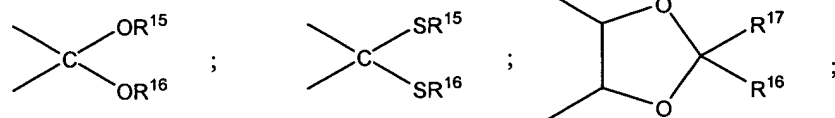
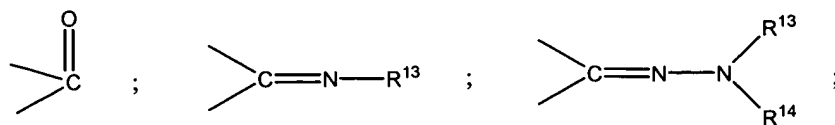
A and D together represent a C₃-C₆-alkanediyl, C₃-C₆-alkenediyl or C₄-C₆-alkanedienediyl group in each of which one methylene group is optionally replaced by oxygen or sulphur and which is in each case optionally substituted by halogen, hydroxyl, mercapto, or by C₁-C₁₀-alkyl, C₁-C₆-alkoxy, C₁-C₆-alkylthio, C₃-C₇-cycloalkyl, phenyl or benzyloxy, each of which is optionally substituted by halogen, or by further C₃-C₆-alkanediyl, C₃-C₆-alkenediyl or C₄-C₆-alkanedienediyl group which forms a fused ring and in each of which one methylene group is optionally replaced by oxygen or sulphur and which is optionally substituted by C₁-C₆-alkyl or in which two adjacent substituents together with the carbon atoms to which they are bonded optionally form a further saturated or unsaturated carbocycle having 5 or 6 ring atoms, or

A and D together represent a C₃-C₆-alkanediyl or C₃-C₆-alkenediyl group each of which one of the following groups

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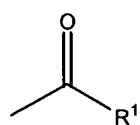
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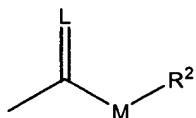


is optionally present;

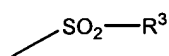
G represents hydrogen (a),



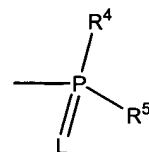
(b),



(c),



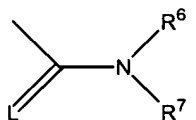
(d),



(e),

E (f)

or



(g),

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in which

E represents a metal ion equivalent or an ammonium ion,

L represents oxygen or sulphur and

M represents oxygen or sulphur,

R¹ represents C₁-C₂₀-alkyl, C₂-C₂₀-alkenyl, C₁-C₈-alkoxy-C₁-C₈-alkyl, C₁-C₈-alkylthio-C₁-C₈-alkyl or poly-C₁-C₈-alkoxy-C₁-C₈-alkyl, each of which is optionally substituted by halogen, or represents C₃-C₈-cycloalkyl which is optionally substituted by halogen, C₁-C₆-alkyl or C₁-C₆-alkoxy and in which one or two methylene groups which are not directly adjacent are optionally replaced by oxygen and/or sulphur,

or represents phenyl which is optionally substituted by halogen, cyano, nitro, C₁-C₆-alkyl, C₁-C₆-alkoxy, C₁-C₆-halogenoalkyl, C₁-C₆-halogenoalkoxy, C₁-C₆-alkylthio or C₁-C₆-alkylsulphonyl,

or represents phenyl-C₁-C₆-alkyl which is optionally substituted by halogen, nitro, cyano, C₁-C₆-alkyl, C₁-C₆-alkoxy, C₁-C₆-halogenoalkyl or C₁-C₆-halogenoalkoxy,

or represents 5- or 6-membered hetaryl having one or two hetero atoms from the series consisting of oxygen, sulphur and nitrogen which is optionally substituted by halogen or C₁-C₆-alkyl,

or represents phenoxy-C₁-C₆-alkyl which is optionally substituted by halogen or C₁-C₆-alkyl,

or represents 5- or 6-membered hetaryl-C₁-C₆-alkyl having one or two hetero atoms from the series consisting of oxygen, sulphur and nitrogen which is

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a²

FOOTNOTES 12401

contd.
a²

optionally substituted by halogen, amino or C₁-C₆-alkyl,

R² represents C₁-C₂₀-alkyl, C₂-C₂₀-alkenyl, C₁-C₈-alkoxy-C₂-C₈-alkyl or poly-C₁-C₈-alkoxy-C₂-C₈-alkyl, each of which is optionally substituted by halogen,

or represents C₃-C₈-cycloalkyl which is optionally substituted by halogen, C₁-C₆-alkyl or C₁-C₆-alkoxy, or

represents phenyl or benzyl, each of which is optionally substituted by halogen, cyano, nitro, C₁-C₆-alkyl, C₁-C₆-alkoxy, C₁-C₆-halogenoalkyl, C₁-C₆-halogenoalkoxy,

R³ represents C₁-C₈-alkyl which is optionally substituted by halogen, or represents phenyl or benzyl, each of which is optionally substituted by halogen, C₁-C₆-alkyl, C₁-C₆-alkoxy, C₁-C₄-halogenoalkyl, C₁-C₄-halogenoalkoxy, cyano or nitro,

R⁴ and R⁵ independently of one another represent C₁-C₈-alkyl, C₁-C₈-alkoxy, C₁-C₈-alkylamino, di-(C₁-C₈-alkyl)amino, C₁-C₈-alkylthio or C₂-C₈-alkenylthio, each of which is optionally substituted by halogen, or represent phenyl, phenoxy or phenylthio, each of which is optionally substituted by halogen, nitro, cyano, C₁-C₄-alkoxy, C₁-C₄-halogenoalkoxy, C₁-C₄-alkylthio, C₁-C₄-halogenoalkylthio, C₁-C₄-alkyl or C₁-C₄-halogenoalkyl,

R⁶ and R⁷ independently of one another represent hydrogen, or represent C₁-C₈-alkyl, C₃-C₈-cycloalkyl, C₁-C₈-alkoxy, C₃-C₈-alkenyl or C₁-C₈-alkoxy-C₂-C₈-alkyl, each of which is optionally substituted by halogen, or represent phenyl or benzyl, each of which is optionally substituted by halogen, C₁-C₈-alkyl, C₁-C₈-halogenoalkyl or C₁-C₈-alkoxy, or together represent a C₃-C₆-alkylene radical which is optionally substituted by C₁-C₆-alkyl and in which one methylene groups is optionally

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a²

replaced by oxygen or sulphur,

R¹³ represents hydrogen, or represents C₁-C₈-alkyl or C₁-C₈-alkoxy, each of which is optionally substituted by halogen, or represents C₃-C₈-cycloalkyl which is optionally substituted by halogen, C₁-C₄-alkyl or C₁-C₄-alkoxy and in which one methylene group is optionally replaced by oxygen or sulphur, or represents phenyl, phenyl-C₁-C₄-alkyl or phenyl-C₁-C₄-alkoxy, each of which is optionally substituted by halogen, C₁-C₆-alkyl, C₁-C₆-alkoxy, C₁-C₄-halogenoalkyl, C₁-C₄-halogenoalkoxy, nitro or cyano,

R¹⁴ represents hydrogen or C₁-C₈-alkyl or

R¹³ and R¹⁴ together represent C₄-C₆-alkanediyl,

R¹⁵ and R¹⁶ are identical or different and represent C₁-C₆-alkyl or

R¹⁵ and R¹⁶ together represent a C₂-C₄-alkanediyl radical which is optionally substituted by C₁-C₆-alkyl or by phenyl which is optionally substituted by halogen, C₁-C₄-alkyl, C₁-C₄-halogenoalkyl, C₁-C₄-alkoxy, C₁-C₄-halogenoalkoxy, nitro or cyano,

R¹⁷ and R¹⁸ independently of one another represent hydrogen, or represent C₁-C₈-alkyl which is optionally substituted by halogen, or represent phenyl which is optionally substituted by halogen, C₁-C₆-alkyl, C₁-C₆-alkoxy, C₁-C₄-halogenoalkyl, C₁-C₄-halogenoalkoxy, nitrogen or cyano, or

R¹⁷ and R¹⁸ together with the carbon atom to which they are bonded represent C₅-C₇-cycloalkyl which is optionally substituted by C₁-C₄-alkyl or C₁-C₄-alkoxy and in which one methylene group is optionally replaced by oxygen or sulphur and

FOOTNOTES 121401

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a²

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R¹⁹ and R²⁰ independently of one another represent C₁-C₁₀-alkyl, C₂-C₁₀-alkenyl, C₁-C₁₀-alkoxy, C₁-C₁₀-alkylamino, C₃-C₁₀-alkenylamino, di-(C₁-C₁₀-alkyl)amino or di-(C₃-C₁₀-alkenyl)amino.

3. Compound of the formula (I) according to claim 1 in which

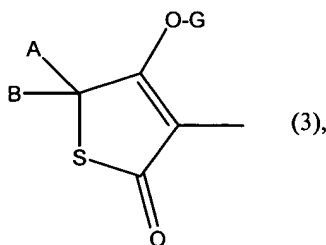
X represents fluorine, chlorine or bromine,

Y represents fluorine, chlorine, bromine or C₁-C₄-alkyl,

Z represents fluorine, chlorine, bromine or C₁-C₄-alkyl,

where always one of the substituents Y and Z represent halogen, while the other represents alkyl,

Het represents



A represents hydrogen, or represents C₁-C₁₀-alkyl, C₂-C₆-alkenyl, C₁-C₈-alkoxy-C₁-C₆-alkyl, poly-C₁-C₆-alkoxy-C₁-C₆-alkyl or C₁-C₈-alkylthio-C₁-C₆-alkyl, each of which is optionally substituted by fluorine or chlorine, or represents C₃-C₇-cycloalkyl which is optionally substituted by fluorine, chlorine, C₁-C₄-alkyl or C₁-C₄-alkoxy and in which one or two methylene groups which are not directly adjacent are optionally replaced by oxygen and/or sulphur, or represents phenyl,

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furanyl, pyridyl, imidazolyl, triazolyl, pyrazolyl, indolyl, thiazolyl, thienyl or phenyl-C₁-C₄-alkyl each of which is optionally substituted by fluorine, chlorine, bromine, C₁-C₄-alkyl, C₁-C₄-halogenoalkyl, C₁-C₄-alkoxy, C₁-C₄-halogenoalkoxy, cyano or nitro,

B represents hydrogen, C₁-C₁₀-alkyl or C₁-C₆-alkoxy-C₁-C₄-alkyl, or

A, B and the carbon atom to which they are bonded represent C₃-C₈-cycloalkyl or C₅-C₈-cycloalkenyl in each of which a methylene group is optionally replaced by oxygen or sulphur and which are optionally substituted by C₁-C₆-alkyl, C₃-C₈-cycloalkyl, C₁-C₃-halogenoalkyl, C₁-C₆-alkoxy, C₁-C₆-alkylthio, fluorine, chlorine or phenyl, or

A, B and the carbon atom to which they are bonded represent C₅-C₆-cycloalkyl which is substituted by an alkylenediyl group which optionally contains one or two oxygen and/or sulphur atoms or by an alkylenedioxy or by an alkylenedithioyl group, this group, together with the carbon atom to which it is bonded forming a further five to seven-membered ring, or

A, B and the carbon atom to which they are bonded represent C₃-C₆-cycloalkyl or C₅-C₆-cycloalkenyl in which two substituents together with the carbon atoms to which they are bonded represent C₃-C₅-alkanediyl, C₃-C₅-alkenediyl or butadienediyl, each of which is optionally substituted by C₁-C₅-alkyl, C₁-C₅-alkoxy, fluorine, chlorine or bromine and in which in each case one methylene group is optionally replaced by oxygen or sulphur,

D represents hydrogen, C₁-C₁₀-alkyl, C₃-C₆-alkenyl, C₃-C₆-alkinyl, C₁-C₈-alkoxy-C₂-C₆-alkyl, poly-C₁-C₆-alkoxy-C₂-C₆-alkyl or C₁-C₈-alkylthio-C₂-C₆-alkyl, each of which is optionally substituted by fluorine or chlorine, or represents C₃-C₇-

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a²

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FOOTNOTES

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a²

cycloalkyl which is optionally substituted by fluorine, chlorine, C₁-C₄-alkyl, C₁-C₄-alkoxy or C₁-C₂-halogenoalkyl and in which one or two methylene groups which are not directly adjacent are optionally replaced by oxygen and/or sulphur, or represents phenyl, furanyl, imidazolyl, pyridyl, thiazolyl, pyrazolyl, pyrimidyl, pyrrolyl, thienyl, triazolyl or phenyl-C₁-C₄-alkyl each of which is optionally substituted by fluorine, chlorine, bromine, C₁-C₄-alkyl, C₁-C₄-halogenoalkyl, C₁-C₄-alkoxy, C₁-C₄-halogenoalkoxy, cyano or nitro, or

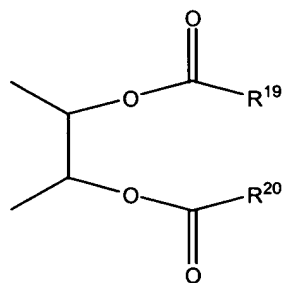
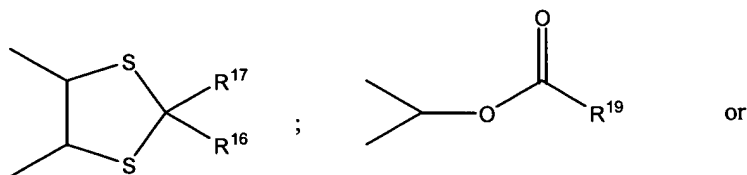
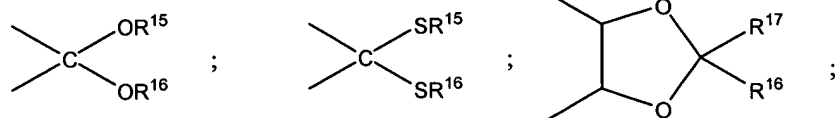
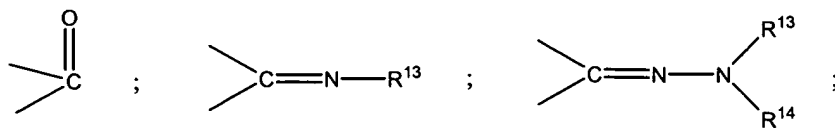
A and D together represent a C₃-C₅-alkanediyl or C₃-C₅-alkenediyl group in each of which one methylene group is optionally replaced by oxygen or sulphur and which is in each case optionally substituted by fluorine, chlorine, hydroxyl, mercapto, or by C₁-C₆-alkyl, C₁-C₄-alkoxy, C₁-C₄-alkylthio, C₃-C₆-cycloalkyl, phenyl or benzyloxy, each of which is optionally substituted by fluorine or chlorine, or

in which in each case one of the following groups

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FOOTNOTES

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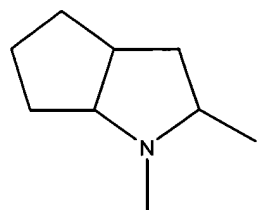
is optionally present;

or A and D (in the case of the compounds of formula (I-1)) together with the atoms to which they are bonded represent one of the groups AD-1 to AD-27

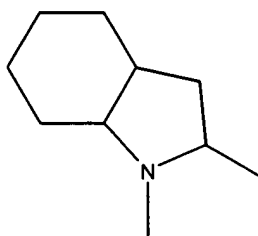
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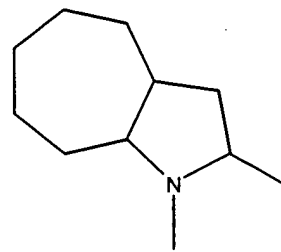
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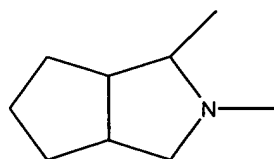
AD-1



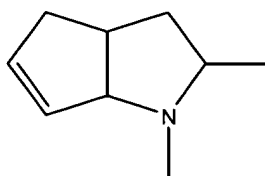
AD-2



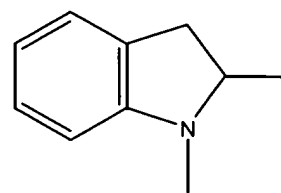
AD-3



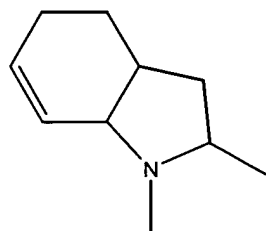
AD-4



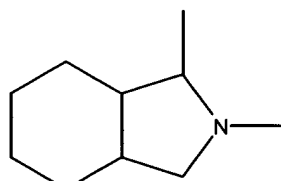
AD-5



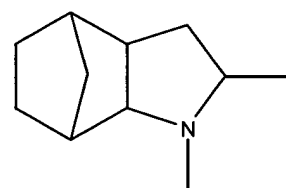
AD-6



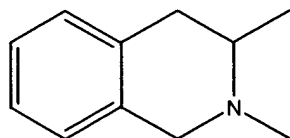
AD-7



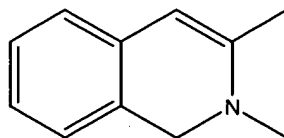
AD-8



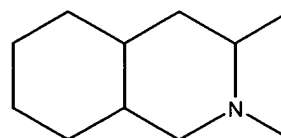
AD-9



AD-10



AD-11

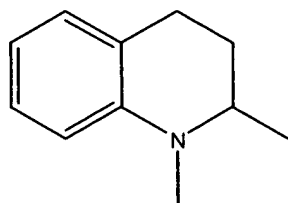


AD-12

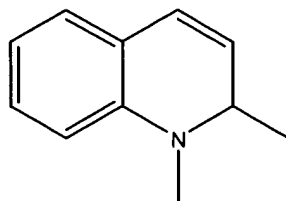
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a²

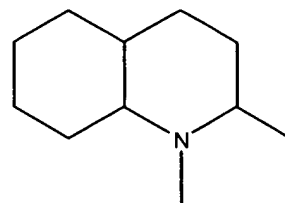
Bayer 9962.3-HCL
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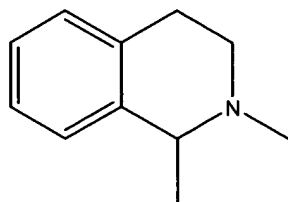
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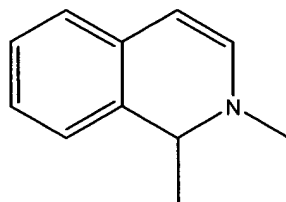
AD-14



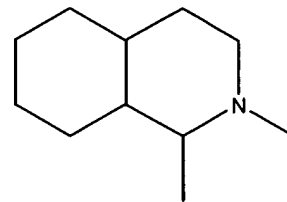
AD-15



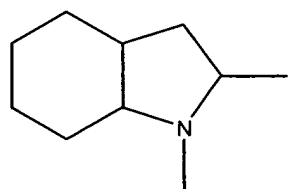
AD-16



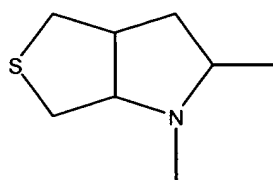
AD-17



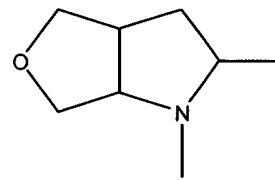
AD-18



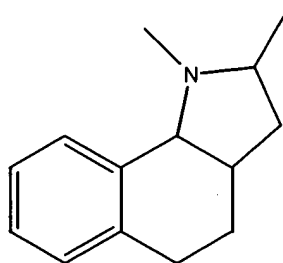
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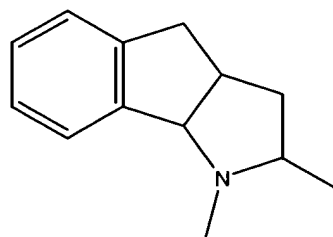
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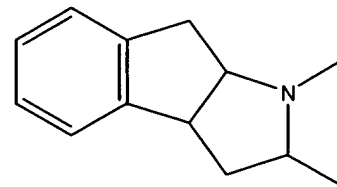
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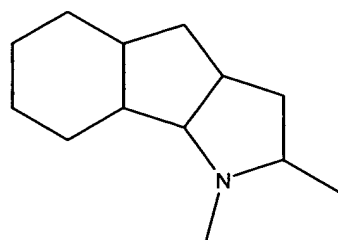
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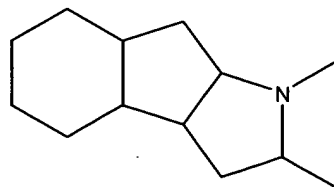
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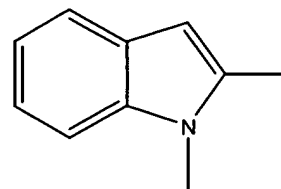
AD-24



AD-25



AD-26

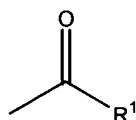


AD-27

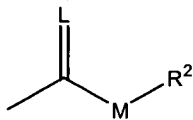
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a²

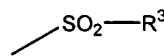
G represents hydrogen (a),



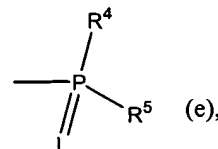
(b),



(c),



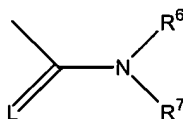
(d),



(e),

E (f)

or



(g),

in which

E represents a metal ion equivalent or an ammonium ion,

L represents oxygen or sulphur and

M represents oxygen or sulphur,

R¹ represents C₁-C₁₆-alkyl, C₂-C₁₆-alkenyl, C₁-C₆-alkoxy-C₁-C₆-alkyl, C₁-C₆-alkylthio-C₁-C₆-alkyl or poly-C₁-C₆-alkoxy-C₁-C₆-alkyl, each of which is optionally substituted by fluorine or chlorine, or represents C₃-C₇-cycloalkyl which is optionally substituted by fluorine, chlorine, C₁-C₅-alkyl or C₁-C₅-alkoxy and in which one or two methylene groups which are not directly adjacent are optionally replaced by oxygen and/or sulphur,

or represents phenyl which is optionally substituted by fluorine, chlorine, bromine, cyano, nitro, C₁-C₄-alkyl, C₁-C₄-alkoxy, C₁-C₃-halogenoalkyl, C₁-C₃-halogenoalkoxy, C₁-C₄-alkylthio or C₁-C₄-alkylsulphonyl,

or represents phenyl-C₁-C₄-alkyl which is optionally substituted by fluorine, chlorine, bromine, nitro, cyano, C₁-C₄-alkyl, C₁-C₄-alkoxy, C₁-C₃-halogenoalkyl

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contd.
a 2

or C₁-C₃-halogenoalkoxy,

or represents pyrazolyl, thiazolyl, pyridyl, pyrimidyl, furanyl or thienyl, each of which is optionally substituted by fluorine, chlorine, bromine or C₁-C₄-alkyl,

or represents phenoxy-C₁-C₅-alkyl which is optionally substituted by fluorine, chlorine, bromine or C₁-C₄-alkyl,

or represents pyridyloxy-C₁-C₅-alkyl, pyrimidyloxy-C₁-C₅-alkyl or thiazolyloxy-C₁-C₅-alkyl, each of which is optionally substituted by fluorine, chlorine, bromine, amino or C₁-C₄-alkyl,

R² represents C₁-C₁₆-alkyl, C₂-C₁₆-alkenyl, C₁-C₆-alkoxy-C₂-C₆-alkyl or poly-C₁-C₆-alkoxy-C₂-C₆-alkyl, each of which is optionally substituted by fluorine or chlorine,

or represents C₃-C₇-cycloalkyl which is optionally substituted by fluorine, chlorine, C₁-C₄-alkyl or C₁-C₄-alkoxy, or

represents phenyl or benzyl, each of which is optionally substituted by fluorine, chlorine, bromine, cyano, nitro, C₁-C₃-alkyl, C₁-C₃-alkoxy, C₁-C₃-halogenoalkyl, C₁-C₃-halogenoalkoxy,

R³ represents C₁-C₆-alkyl which is optionally substituted by fluorine or chlorine, or represents phenyl or benzyl, each of which is optionally substituted by fluorine, chlorine, bromine, C₁-C₅-alkyl, C₁-C₅-alkoxy, C₁-C₃-halogenoalkyl, C₁-C₃-halogenoalkoxy, cyano or nitro,

R⁴ and R⁵ independently of one another represent C₁-C₆-alkyl, C₁-C₆-alkoxy, C₁-C₆-

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contd.
a 2

alkylamino, di-(C₁-C₆-alkyl)amino, C₁-C₆-alkylthio or C₃-C₄-alkenylthio, each of which is optionally substituted by fluorine or chlorine, or represent phenyl, phenoxy or phenylthio, each of which is optionally substituted by fluorine, chlorine, bromine, nitro, cyano, C₁-C₃-alkoxy, C₁-C₃-halogenoalkoxy, C₁-C₃-alkylthio, C₁-C₃-halogenoalkylthio, C₁-C₃-alkyl or C₁-C₃-halogenoalkyl,

R⁶ and R⁷ independently of one another represent hydrogen, or represent C₁-C₆-alkyl, C₃-C₆-cycloalkyl, C₁-C₆-alkoxy, C₃-C₆-alkenyl or C₁-C₆-alkoxy-C₂-C₆-alkyl, each of which is optionally substituted by fluorine or chlorine, or represent phenyl or benzyl, each of which is optionally substituted by fluorine, chlorine, bromine, C₁-C₅-alkyl, C₁-C₅-halogenoalkyl or C₁-C₅-alkoxy, or together represent a C₃-C₆-alkylene radical which is optionally substituted by C₁-C₄-alkyl and in which one methylene groups is optionally replaced by oxygen or sulphur,

R¹³ represents hydrogen, or represents C₁-C₆-alkyl or C₁-C₆-alkoxy, each of which is optionally substituted by fluorine or chlorine, or represents C₃-C₇-cycloalkyl which is optionally substituted by fluorine, C₁-C₂-alkyl or C₁-C₂-alkoxy and in which one methylene group is optionally replaced by oxygen or sulphur, or represents phenyl, phenyl-C₁-C₃-alkyl or phenyl-C₁-C₂-alkoxy, each of which is optionally substituted by fluorine, chlorine, bromine, C₁-C₅-alkyl, C₁-C₅-alkoxy, C₁-C₂-halogenoalkyl, C₁-C₂-halogenoalkoxy, nitro or cyano,

R¹⁴ represents hydrogen or C₁-C₆-alkyl or

R¹³ and R¹⁴ together represent C₄-C₆-alkanediyl,

R¹⁵ and R¹⁶ are identical or different and represent C₁-C₄-alkyl or

R¹⁵ and R¹⁶ together represent a C₂-C₃-alkanediyl radical which is optionally substituted

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a 2

by C₁-C₄-alkyl or by phenyl which is optionally substituted by fluorine, chlorine, bromine, C₁-C₂-alkyl, C₁-C₂-halogenoalkyl, C₁-C₂-alkoxy, C₁-C₂-halogenoalkoxy, nitro or cyano,

R¹⁷ and R¹⁸ independently of one another represent hydrogen, or represent C₁-C₈-alkyl which is optionally substituted by fluorine or chlorine, or represent phenyl which is optionally substituted by fluorine, chlorine, bromine, C₁-C₄-alkyl, C₁-C₄-alkoxy, C₁-C₂-halogenoalkyl, C₁-C₂-halogenoalkoxy, nitrogen or cyano, or

R¹⁷ and R¹⁸ together with the carbon atom to which they are bonded represent C₅-C₆-cycloalkyl which is optionally substituted by C₁-C₃-alkyl or C₁-C₃-alkoxy and in which one methylene group is optionally replaced by oxygen or sulphur and

R¹⁹ and R²⁰ independently of one another represent C₁-C₆-alkyl, C₂-C₆-alkenyl, C₁-C₆-alkoxy, C₁-C₆-alkylamino, C₃-C₆-alkenylamino, di-(C₁-C₆-alkyl)amino or di-(C₃-C₆-alkenyl)amino.

4. Compound of the formula (I) according to claim 1 in which

X represents fluorine, chlorine or bromine,

Y represents fluorine, chlorine, bromine, methyl, ethyl, n-propyl or iso-propyl,

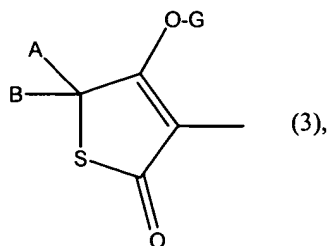
Z represents fluorine, chlorine, bromine, methyl, ethyl, n-propyl or iso-propyl,

where always one of the substituents Y and Z represent halogen, while the other represents alkyl,

Het represents

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a²



- A represents hydrogen, or represents C₁-C₈-alkyl, C₂-C₆-alkenyl, C₁-C₆-alkoxy-C₁-C₄-alkyl, poly-C₁-C₄-alkoxy-C₁-C₄-alkyl or C₁-C₆-alkylthio-C₁-C₄-alkyl, each of which is optionally substituted by fluorine or chlorine, or represents C₃-C₆-cycloalkyl which is optionally substituted by fluorine, chlorine, methyl or methoxy and in which one or two methylene groups which are not directly adjacent are optionally replaced by oxygen and/or sulphur, or represents phenyl, pyridyl or benzyl, each of which is optionally substituted by fluorine, chlorine, bromine, methyl, ethyl, n-propyl, iso-propyl, methoxy, ethoxy, trifluoromethyl, trifluoromethoxy, cyano or nitro,
- B represents hydrogen, C₁-C₈-alkyl or C₁-C₄-alkoxy-C₁-C₂-alkyl, or
- A, B and the carbon atom to which they are bonded represent C₃-C₈-cycloalkyl or C₅-C₈-cycloalkenyl in each of which a methylene group is optionally replaced by oxygen or sulphur and which are optionally substituted by methyl, ethyl, n-propyl, iso-propyl, butyl, iso-butyl, sec-butyl, tert-butyl, cyclohexyl, trifluoromethyl, methoxy, ethoxy, n-propoxy, iso-propoxy, butoxy, iso-butoxy, sec-butoxy, tert-butoxy, methylthio, ethylthio, fluorine, chlorine or phenyl, or
- A, B and the carbon atom to which they are bonded represent C₅-C₆-cycloalkyl which is substituted by an alkylenediyl group which optionally contains one or two oxygen and/or sulphur atoms or by an alkylenedioxy group, this alkylenediyl or

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contd.
A²

alkylenedioxy group together with the carbon atom to which it is bonded forming a further five to six-membered ring, or

- A, B and the carbon atom to which they are bonded represent C₃-C₆-cycloalkyl or C₅-C₆-cycloalkenyl in which two substituents together with the carbon atoms to which they are bonded represent C₃-C₄-alkanediyl, C₃-C₄-alkenediyl or butadienediyl, in each case one methylene group is optionally replaced by oxygen or sulphur,
- D represents hydrogen, C₁-C₈-alkyl, C₃-C₄-alkenyl, C₃-C₄-alkinyl, C₁-C₆-alkoxy-C₂-C₄-alkyl, poly-C₁-C₄-alkoxy-C₂-C₄-alkyl or C₁-C₄-alkylthio-C₂-C₄-alkyl or C₃-C₆-cycloalkyl in which one or two methylene groups which are not directly adjacent are optionally replaced by oxygen and/or sulphur, in each case optionally substituted by fluorine or chlorine, or represents phenyl, furanyl, pyridyl, thienyl, or benzyl, each of which is optionally substituted by fluorine, chlorine, bromine, methyl, ethyl, n-propyl, iso-propyl, methoxy, ethoxy, trifluoromethyl, trifluoromethoxy, cyano or nitro,

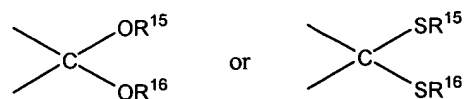
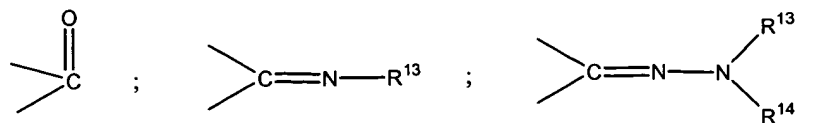
or

A and D together represent a C₃-C₅-alkanediyl or C₃-C₅-alkenediyl group in each of which one methylene group is optionally replaced by oxygen or sulphur and which are optionally substituted by fluorine, chlorine, hydroxyl, mercapto, or by C₁-C₆-alkyl, C₁-C₄-alkoxy, C₁-C₄-alkylthio, C₃-C₆-cycloalkyl, phenyl or benzyloxy, each of which is optionally substituted by fluorine or chlorine, or

in which in each case one of the following groups

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contd.
a²



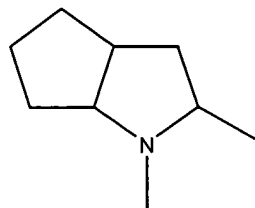
is optionally present;

or A and D (in the case of the compounds of formula (I-1)) together with the atoms to which they are bonded represent one of the following groups:

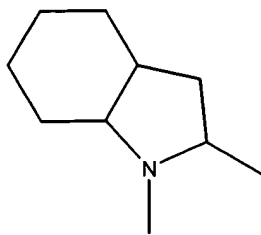
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T04T2T"569ZT00F

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a²

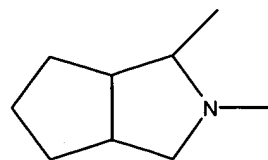
Bayer 9962.3-HCL
Le A 31-023 US-03



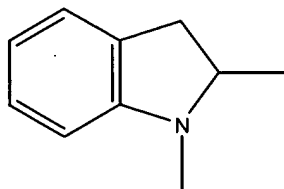
AD-1



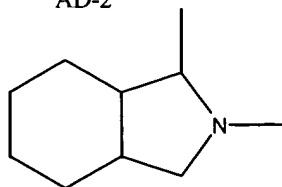
AD-2



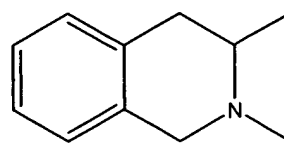
AD-4



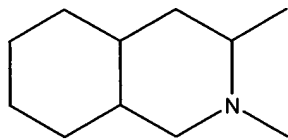
AD-6



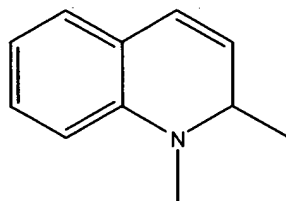
AD-8



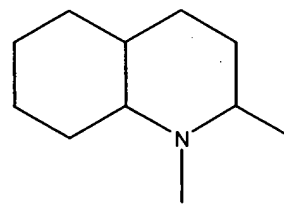
AD-10



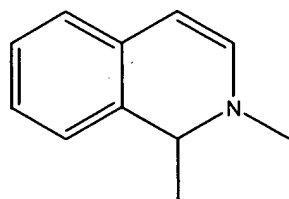
AD-12



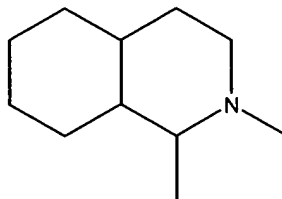
AD-14



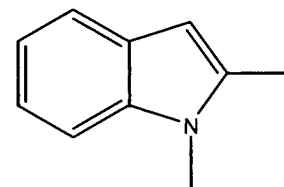
AD-15



AD-17

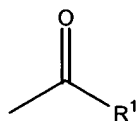


AD-18

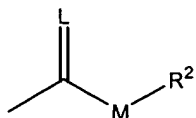


AD-27

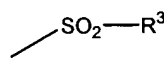
G represents hydrogen (a),



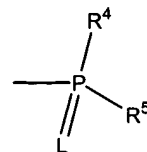
(b),



(c),



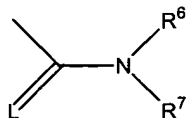
(d),



(e),

E (f)

or



(g),

contd.
a²

in which

E represents a metal ion equivalent or an ammonium ion,

L represents oxygen or sulphur and

M represents oxygen or sulphur,

R¹ represents C₁-C₁₄-alkyl, C₂-C₁₄-alkenyl, C₁-C₄-alkoxy-C₁-C₆-alkyl, C₁-C₄-alkylthio-C₁-C₆-alkyl or poly-C₁-C₄-alkoxy-C₁-C₄-alkyl, each of which is optionally substituted by fluorine or chlorine, or represents C₃-C₆-cycloalkyl which is optionally substituted by fluorine, chlorine, methyl, ethyl, n-propyl, isopropyl, n-butyl, i-butyl, tert-butyl, methoxy, ethoxy, n-propoxy or isopropoxy and in which one or two methylene groups which are not directly adjacent are optionally replaced by oxygen and/or sulphur,

or represents phenyl which is optionally substituted by fluorine, chlorine, bromine, cyano, nitro, methyl, ethyl, n-propyl, i-propyl, methoxy, ethoxy, trifluoromethyl, trifluoromethoxy, methylthio, ethylthio, methylsulphonyl or ethylsulphonyl,

or represents benzyl which is optionally substituted by fluorine, chlorine, bromine, methyl, ethyl, n-propyl, i-propyl, methoxy, ethoxy, trifluoromethyl or trifluoromethoxy,

or represents furanyl, thienyl or pyridyl, each of which is optionally substituted by fluorine, chlorine, bromine, methyl or ethyl,

or represents phenoxy-C₁-C₄-alkyl which is optionally substituted by fluorine, chlorine, methyl or ethyl, or

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a²

represents pyridyloxy-C₁-C₄-alkyl, pyrimidyloxy-C₁-C₄-alkyl or thiazolyloxy-C₁-C₄-alkyl, each of which is optionally substituted by fluorine, chlorine, bromine, methyl or ethyl,

R² represents C₁-C₁₄-alkyl, C₂-C₁₄-alkenyl, C₁-C₄-alkoxy-C₂-C₆-alkyl or poly-C₁-C₄-alkoxy-C₂-C₆-alkyl, each of which is optionally substituted by fluorine or chlorine,

or represents C₃-C₆-cycloalkyl which is optionally substituted by fluorine, chlorine, cyano, nitro, methyl, ethyl, n-propyl, iso-propyl or methoxy, ethoxy, trifluoromethyl or trifluoromethoxy, or

represents phenyl or benzyl, each of which is optionally substituted by fluorine, chlorine, methyl, ethyl, n-propyl, iso-propyl or methoxy, cyano, nitro, ethoxy, trifluoromethyl or trifluoromethoxy,

R³ represents methyl, ethyl, propyl or isopropyl, each of which is optionally substituted by fluorine or chlorine, or represents phenyl or benzyl, each of which is optionally substituted by fluorine, chlorine, bromine, methyl, ethyl, propyl, iso-propyl, tert-butyl, methoxy, ethoxy, isopropoxy, tert-butoxy, trifluoromethyl, trifluoromethoxy, cyano or nitro,

R⁴ and R⁵ independently of one another represent C₁-C₄-alkyl, C₁-C₄-alkoxy, C₁-C₄-alkylamino, di-(C₁-C₄-alkyl)amino or C₁-C₄-alkylthio, each of which is optionally substituted by fluorine or chlorine, or represent phenyl, phenoxy or phenylthio, each of which is optionally substituted by fluorine, chlorine, bromine, nitro, cyano, methyl, methoxy, trifluoromethyl or trifluoromethoxy,

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contd.
a²

R⁶ and R⁷ independently of one another represent hydrogen, or represent C₁-C₄-alkyl, C₃-C₆-cycloalkyl, C₁-C₄-alkoxy, C₃-C₄-alkenyl or C₁-C₄-alkoxy-C₂-C₄-alkyl, each of which is optionally substituted by fluorine or chlorine, or represent phenyl or benzyl, each of which is optionally substituted by fluorine, chlorine, bromine, methyl, methoxy or trifluoromethyl, or together represent a C₅-C₆-alkylene radical which is optionally substituted by methyl or ethyl and in which one methylene groups is optionally replaced by oxygen or sulphur,

R¹³ represents hydrogen, or represents C₁-C₄-alkyl or C₁-C₄-alkoxy, each of which is optionally substituted by fluorine or chlorine, or represents C₃-C₆-cycloalkyl which is optionally substituted by fluorine or chlorine, or represents C₃-C₆-cycloalkyl, or represents phenyl, phenyl-C₁-C₂-alkyl or benzyloxy, each of which is optionally substituted by fluorine, chlorine, bromine, methyl, ethyl, iso-propyl, tert-butyl, methoxy, ethoxy, iso-propoxy, tert-butoxy, trifluoromethyl, trifluoromethoxy, nitro or cyano,

R¹⁴ represents hydrogen or C₁-C₄-alkyl, or

R¹³ and R¹⁴ together represent C₄-C₆-alkanediyl,

R¹⁵ and R¹⁶ are identical or different and represent methyl or ethyl, or

R¹⁵ and R¹⁶ together represent a C₂-C₃-alkanediyl radical which is optionally substituted by methyl, ethyl, n-propyl, iso-propyl, n-butyl, iso-butyl, sec-butyl or tert-butyl, or by phenyl which is optionally substituted by fluorine, chlorine, methoxy, trifluoromethyl, trifluoromethoxy, nitro or cyano.

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